Freight Isn't a Four Letter Word!

Innovative Modal Transportation Planning at Mn/DOT Metropolitan Division

Prepared for FHWA National Freight Transportation Workshop

by
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Outline:

- Our journey to discovery
- Customer involvement
- Planning - Performance measurement
- Programming - Program Delivery
- Our journey to implementation

Our Journey to Discovery:

I believe one of our richest endowments is imagination. In 1995 I came to the management at Mn/DOT Metro Division with an idea, a very good concept, one that I felt would position the division with the mainstream...namely logistics and the relationship with transportation and commerce. I maintained that if government truly came to understand those whom it was established to serve, it would deliver better products and services and eventually the barriers would break down and a trust-based relationship would evolve. I proved that customers are willing to invest time and energy in working with government, if they are convinced it is a value-added experience.

The genesis of the idea began by visualizing a better future and going after it. As a planner I know the three key characteristics of a solid plan. First, it must involve the future. Second, it must involve action. Third, there is an element of personal or organizational identification or causation.

The future looks tough by any standard, for those of us in transportation. Consider the following: aging infrastructure, congestion and inadequate funding, new transit demands, increased freight transportation demands (highway linkage to air, intermodal, pipeline, rail terminal, water ports) and highway linkage to regional trade centers. Bottlenecks—the fix and the price tag. All this results in very difficult investment decisions involving trade-offs in investment levels, design and scope of projects.

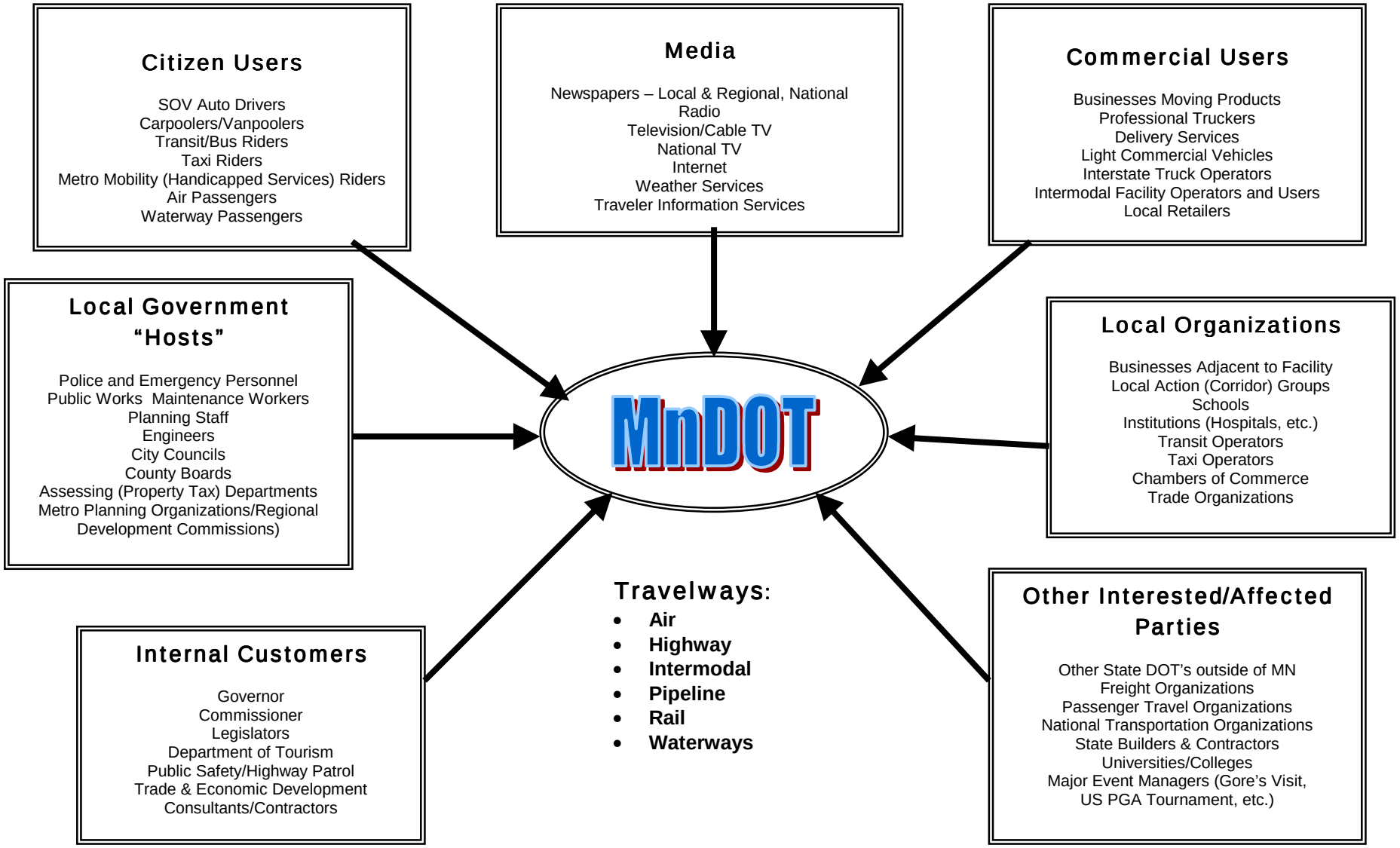
Yet another aspect of this “transportation process” is the broad approval authority by many local and state agencies over transportation projects. The ***problem statement*** is simple, “How can we (Mn/DOT Metro Division) get a finger on the pulse of this important customer group (shippers, carriers, brokers, industry leaders) and incorporate their needs into our project development process?” The obvious next question for those of us at the state level is, “How can we obtain and retain the support and participation of our transportation partners (local governments, transit agencies, regional agencies, etc.) in the project development process?”

The ***goal setting*** process was relatively simple, the process to achieve success is (note the use of the present tense in this sentence, because this is a work in progress) complex. Our vision was (and still is) to identify and resolve impediments to freight movement to and through the Twin Cities Metropolitan Area (eight county region). In order to attain such a lofty goal we needed to identify our stakeholders and quantify (***data collection***) the situation and analyze the findings. As importantly, we needed to share the learning with customers, colleagues and partners.

Customer Involvement:

First, our customers and stakeholders were identified as represented in the following diagram:

MnDOT MODAL STAKEHOLDERS/CUSTOMERS



We then took a three part approach to “getting to know” our customers.

Step One—on-site interviews with shippers in the food and construction industries. These market segments were selected because they are very prominent in the metro (as well as statewide) economic picture, they utilize several modes and travelways in the transport of product and materials, they are often in operation during peak hour travel on our freeways and, are highly time-sensitive. The strategy to meet face-to-face has proven to be an outstanding approach. It was the first “ice-breaker” that helped us establish a relationship.

Step Two—After compiling the information, I scheduled a dialogue session with customers and our executive team. With the help of a facilitator, customers were able to “drill down” to the most critical issues. After completing this rigorous task, I congratulated all participants on a fine job. Then, without blinking an eye, I told the audience that we needed to act on the recommendations, and asked for volunteers. I had 100% cooperation from the group, all participants wanted to serve on the newly formed Response Team!

Step Three—The Response Team was established. We met over the course of three months (October, November and December) to hammer out details of the recommendations, identifying key players (internally and externally), targeted outcomes and benchmarks to assess the success of the projects. We had perfect attendance at all meetings, despite record snowfalls and low temperatures.

The journey to discovery taught us about the significance of supply chain logistics and how dependent our customers are on the transportation system. This exercise helped us understand the issues facing business and gave us the opportunity to share the challenges we face in planning and operating the transportation infrastructure.

Based on the insight we gained through this outreach effort, we have slightly ***refined our goal***. Originally our primary focus was freight transportation, incorporating all modes and travelways. As time passed it became obvious to us that it was impossible and impractical to try to isolate and study freight without investigating and planning for passenger transport. Hence our goal now reads, “To identify and resolve impediments to freight and passenger movement to and through the Twin Cities Metropolitan Area (eight county region).”

Meanwhile, continuing discussions were held with various representatives of our stakeholder groups. We observed a very significant and meaningful fact about these groups—not only do they also depend upon the transportation system for their “business”, but these communities, regional agencies, and other agencies are **the hosts of the infrastructure**.

- *They* are frequently the first called when there is a problem.

- *They* are the first to respond in the event of any emergency requiring police or medical assistance.

- *They* deal with disruption to their local neighborhoods when major transportation projects are under construction as alternate routes traverse through neighborhoods.

- *They* are intimately involved in the design, development, construction, operation, and maintenance of the transportation system.

Armed with this “new” information about our customers and our transportation partners, the next task was to figure out a way to bring this new intelligence about freight and passenger movement into the transportation development process in a manner that would renovate and invigorate the overall transportation system. We wanted to present the case for multi-modal transportation planning.

Planning - Performance Measurement:

By the dawn of the new millennium, we (now I have a talented staff of three, Kate Garwood, Debra Sorenson and Rus Maki) had advanced our work in the development of a strategic modal planning tool that provides a customer-focused framework for investment decision-making. The approach quantifies transportation assets in an economic context. It also pinpoints “hot spots” between highways, airport access/egress, intermodal terminals, pipelines, rail grade crossings and terminals, waterways and ports. The strategy employs both an engineering and economic perspective so that:

- We can develop alternative plans and/or policies (designed to achieve goals)
- We can evaluate alternatives (determine probable effects, both good and bad, and the ease or difficulty of implementation)
- We can formalize preferred plans and/or policies

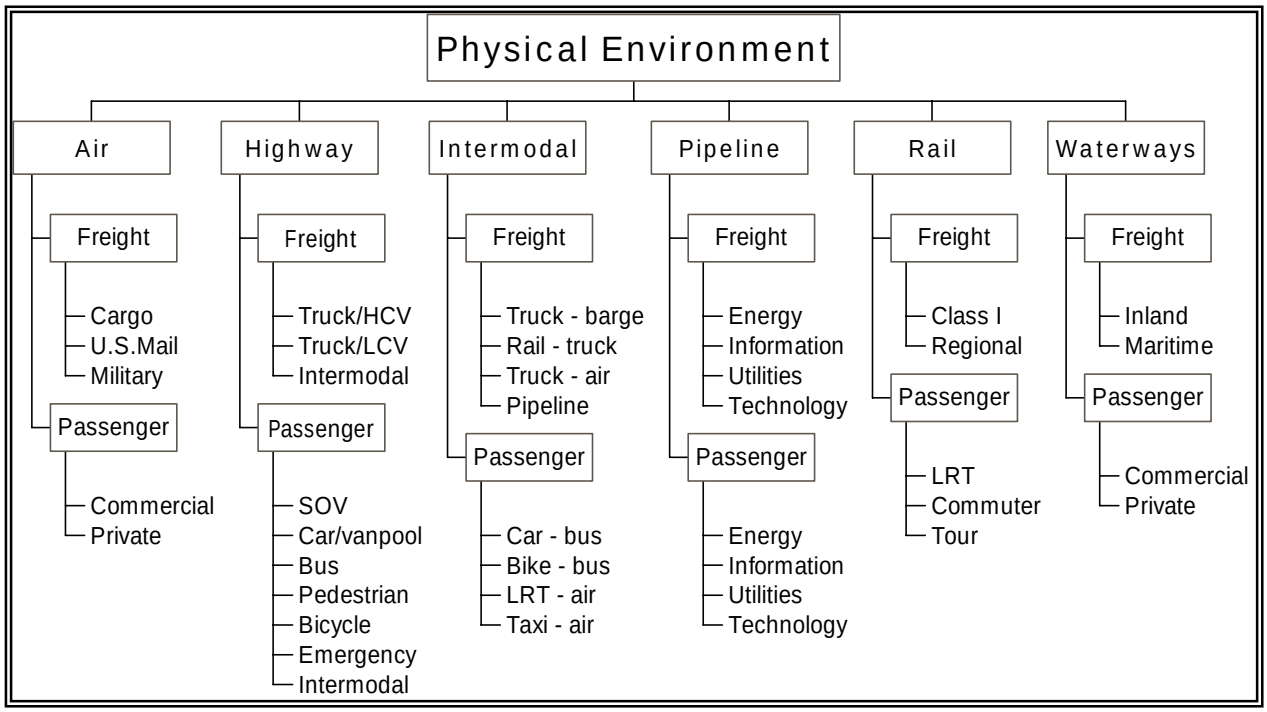
We believe the benefits of this strategy are substantial:

- The analytical tools give us the capability to test investment decisions
- A successful project will increase productivity, mobility, safety and also help to mitigate congestion
- If the plan is well conceived, the solution to the problem is achievable and makes good business sense to all participants in the process, we will realize more “bang for the buck” and potential engage others in financial investment partnerships.

What does the modal planning process look like? There are several dimensions to modal planning, and unlike the highway system, is under the ownership or administration of private enterprise. Adding to the complexity of the process is the broad approval authority by many local and state agencies over our transportation projects. Investment decisions are difficult, with many trade-offs in investment levels, project scope and design. Enter into the fray, modal planning...what is it and how do we integrate it into the highway project development process? We offer our approach as a work in progress.

The **Modal Planning Process** begins with a fundamental understanding of travelways (physical environment, airport, highway, intermodal facility, pipeline, rail grade crossing or/yard, waterways/ports) and modes (freight and passenger), which are further segmented into customer groups such as freight/truck, passenger/bus. The analysis begins by selecting a travelway.

The chart, below, provides an organizational view of the travelways (physical environments) by mode (freight and passenger) with examples of the customer groups within each physical environment and by each mode.



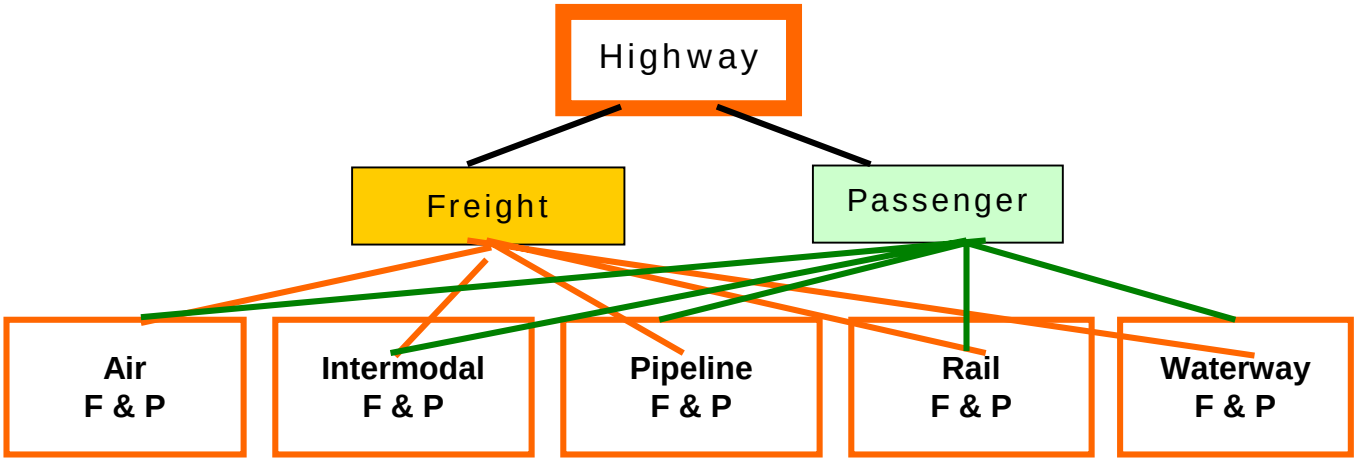
The next step incorporates **performance-based measures** that guide us in the next steps of the analysis process. We developed a set of measures that provide consistent data sets for freight and passenger study. We are able to analyze highway corridors for freight, for passenger, and in composite, to help planners focus on specific measures and conduct other investigations to gain a system-perspective.

At this point the planner has a fundamental understanding of the highway corridor, the next step however begins to target the complex and sensitive relationship between the highway and other travelways. Planners are challenged to ask questions about these multi-modal relationships, such as:

What is the impact of an international airport on the highways adjacent to it? What is the impact of a regional-size airport on the highways? What are the freight and passenger traffic patterns from the airport onto the adjacent highways? Will change to any of the existing travelways or modes of transportation impact the highways adjacent to the airport, e.g. adding light rail transit to the passenger mode mix?

How does the railroad impact barge traffic in the community? Can transit have a positive impact on this highway?

The illustration below depicts the relationships of Highway to the other travelways (air, intermodal, pipeline, rail, and waterways/ports) to be investigated, both from a freight and from a passenger point of view.



This step provides the planner with the ability to identify “hot spots”, critical relationships and impacts between not only travelways (for example, highway to water/port) but also through the development of a comprehensive database, can quantify the “assets” (value of commodity, volume of traffic, number of jobs...).

Following are the quantifiable measures for both freight and passenger modes from a highway perspective. There is no coincidence to the fact that the measures are similar in many cases. The features measured have similar impact on the modes. For example, a congested highway impacts a truck carrying computer parts ***and*** an automobile driven by a single passenger. An airplane not meeting its designated schedule for arrival impacts both the passengers and freight on board.

Freight

Functional Class	Accident Rate
Mobility (LOS)	Proximity
CADT Volume	Land Use (% I/C)
CADT Ratio	Property Value (I/C)
Job Density	Impediments

Passenger

Functional Class	Accident Rate
Mobility (LOS)	Proximity
ADT Volume	Existing Transit
Population Density	Median Income
Job Density	# Vehicles /Household

Measures for the other travelways (air, intermodal, pipeline, rail, and waterways/ports) are in the process of being developed.

This inter-relationship between freight and passenger provides an outstanding decision-support tool, for **planning**:

- Long-range and site-specific plans
- City and county comprehensive plans
- Regional planning
- State planning

Adding to the analysis of the travelways relationships is the major topic of land use, population growth and employment. The following illustrations begin to depict the importance of targeting critical corridors and offering recommendations for future investigation. These illustrations were developed from GIS intelligence, providing the macro-level to micro-level modal views of a highway corridor, surrounding communities, a specific community, and a neighborhood.

Description of GIS Illustrations

Prepared by Rus Maki

The illustrations that follow provide “modal pictures” from several points of view:

A) **Population/Employment Trends 2025 Projections by Municipality for Metro Division**—Provides a view of the future, showing the potential for travel patterns throughout the Metro area based on the projected population and employment for each of the region’s communities. Each community is designated as a future importer of employees or a future exporter of employees. Based on the information, the freeway “ring” around the metro region, I-494/I-694/I-94 “ring” will continue to be pressured during peak hours due to work trips. The question is, “Knowing this, what can we do to the system to reduce certain congestion and improve mobility, access, and safety on the system?”

B) **Intermodal Terminals Eden Prairie and Vicinity**—“Drilling down” to a corridor level and looking at how an individual community, a “host” of infrastructure” might be affected by the various transportation modes.

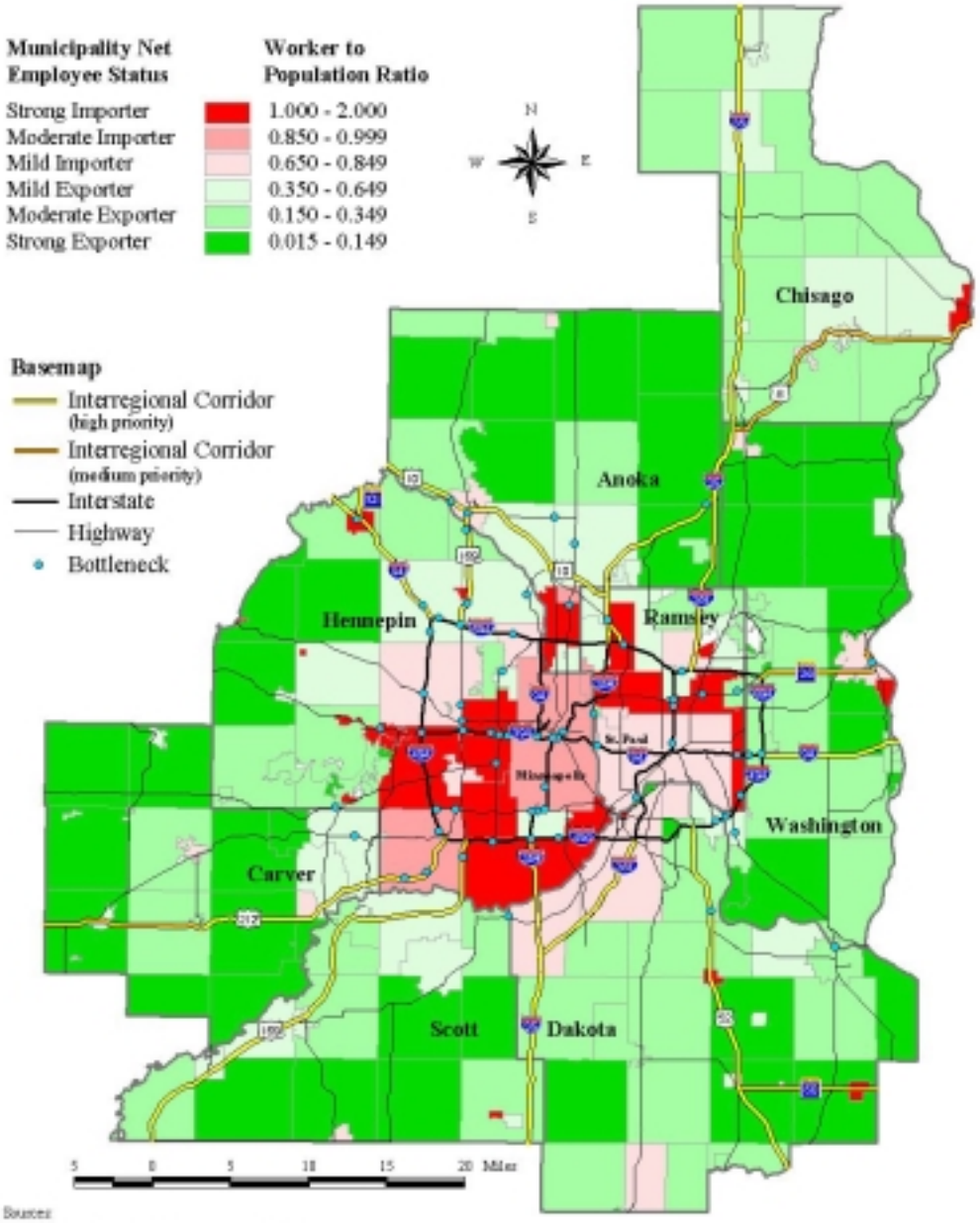
C) **Multi-modal Assets and Impact Points of Eden Prairie, MN**—A series of maps that layer each of the modal impact points within a single community. Would you believe there are approximately 50 total impact points?

1) **Highway, Roadway, Bikeway**
2) **Railroad**
3) **Transit, Transit Facilities**
4) **Airport**
5) **Pipeline**
6) **River**
7) **Truck Terminals—Full Composite of ALL Layers**

D) **Eden Prairie’s Golden Triangle Business Park**—A business neighborhood within the community, supporting a substantial number of jobs and housing units, slightly greater than one square mile in size, yet suffering from severe traffic congestion during peak hours. There are at least eight (8) impact points within the Golden Triangle.

Population and Employment Trends

2025 Projections by Municipality for Metro Division

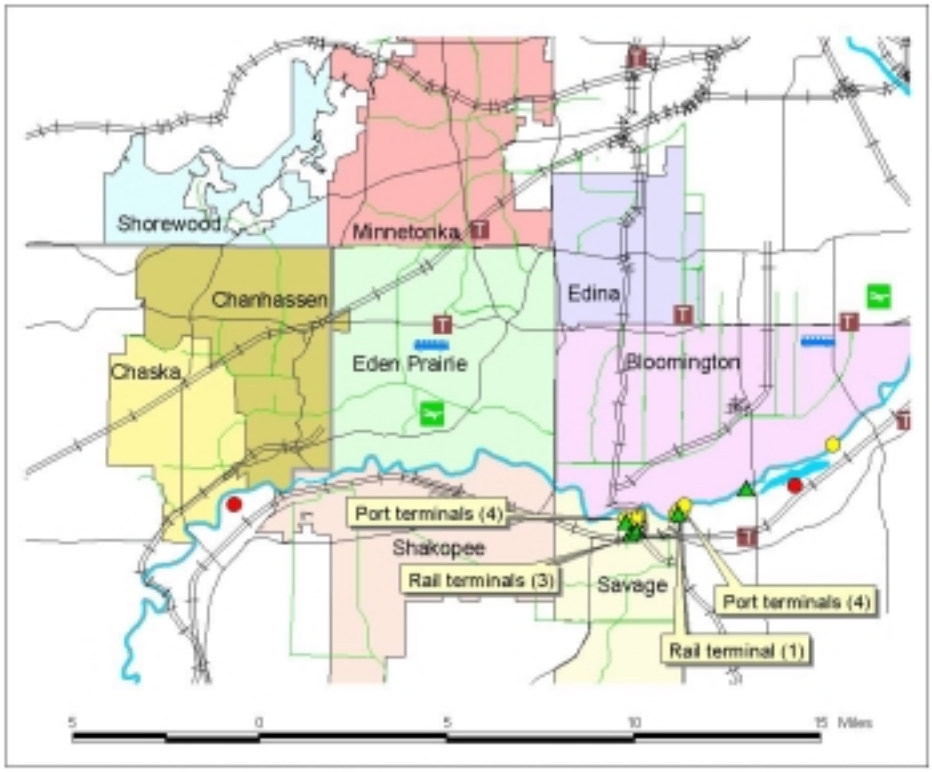


Data Sources:
Population: Metropolitan Council, Regional Blueprint, 1997.
U. S. Census Bureau, 1990.
Employment: Metropolitan Council, Regional Blueprint, 1997.
U. S. Census Bureau, 1990.
Basemap: MnDOT, 1998, 1999.
Bottlenecks: MnDOT, Bottleneck Removal Bulletin, 2000.

Notes:
Population and employment figures for 2025 were forecasted from Metropolitan Council and U. S. Census Bureau data using linear regression analysis. The city of Mendota and Fort Snelling have ratios greater than 2.000 and are therefore treated as outliers. Both are labeled as and included within the "Strong Importer" classification.

Intermodal Terminals

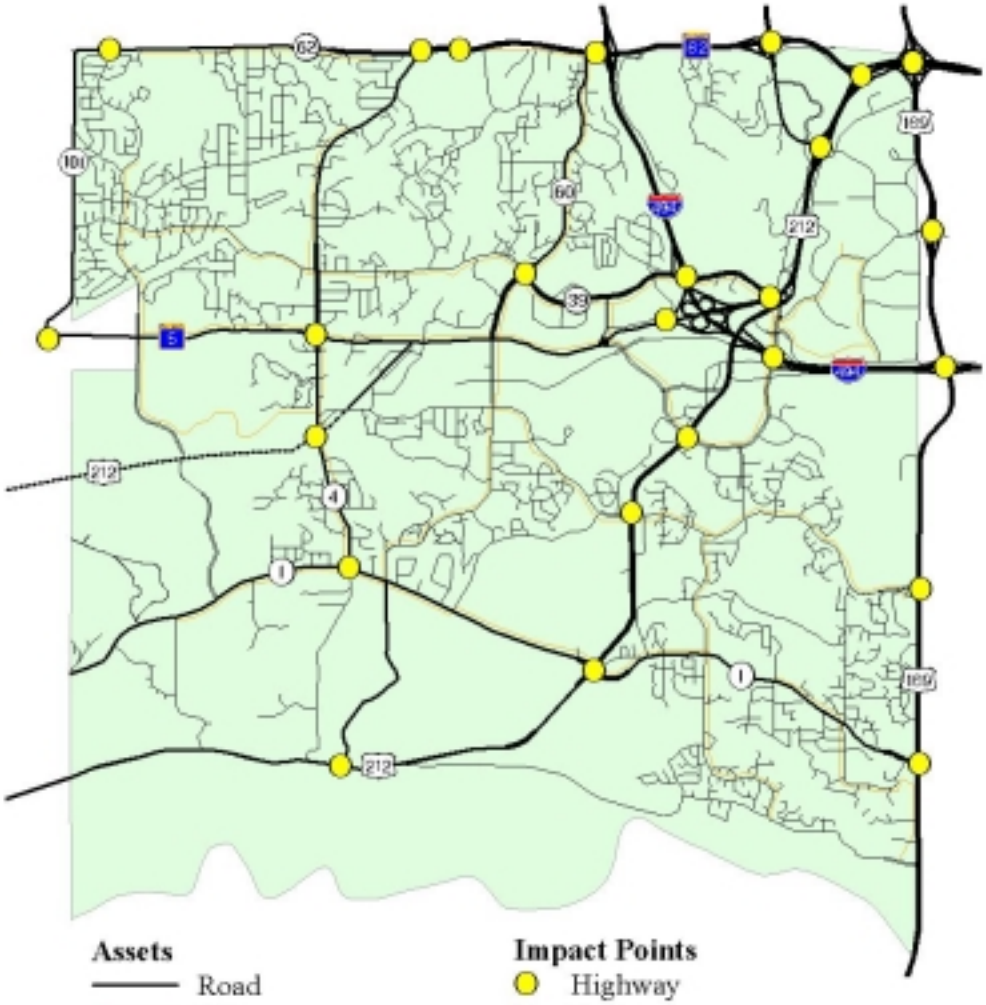
Eden Prairie and Vicinity



Data sources: Basemap: MnDOT Basemap, 1998 & 1999; Terminals: MnDOT Metro TSP, 1997.

Multi-modal Assets and Impact Points

Eden Prairie, Minnesota



Assets

- Road
- Bikeway
- Railroad
- Transit Station
- Transit Garage
- Park and Ride
- Airport
- Pipeline
- River
- Truck Terminal

Impact Points

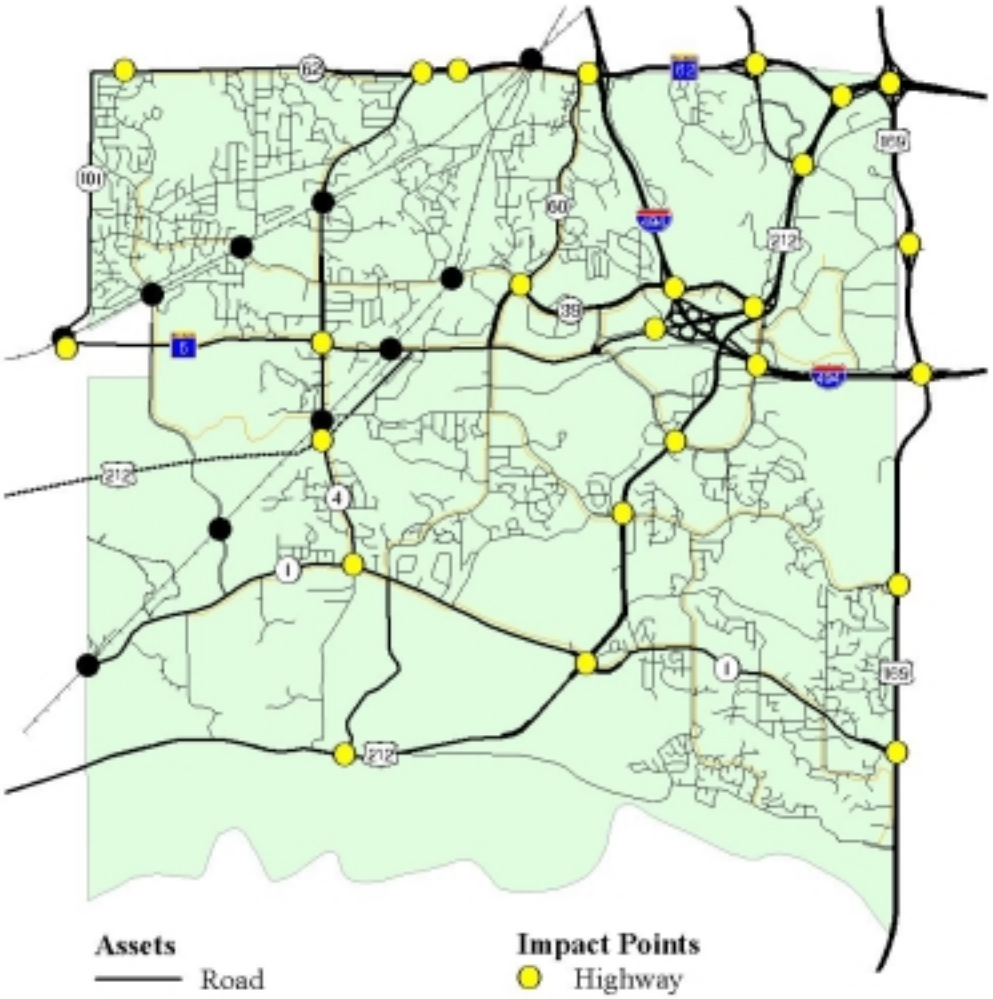
- Highway
- Railroad
- Transit
- Air
- Pipeline
- Water
- Intermodal

N

1 0 1 2 Miles

Multi-modal Assets and Impact Points

Eden Prairie, Minnesota



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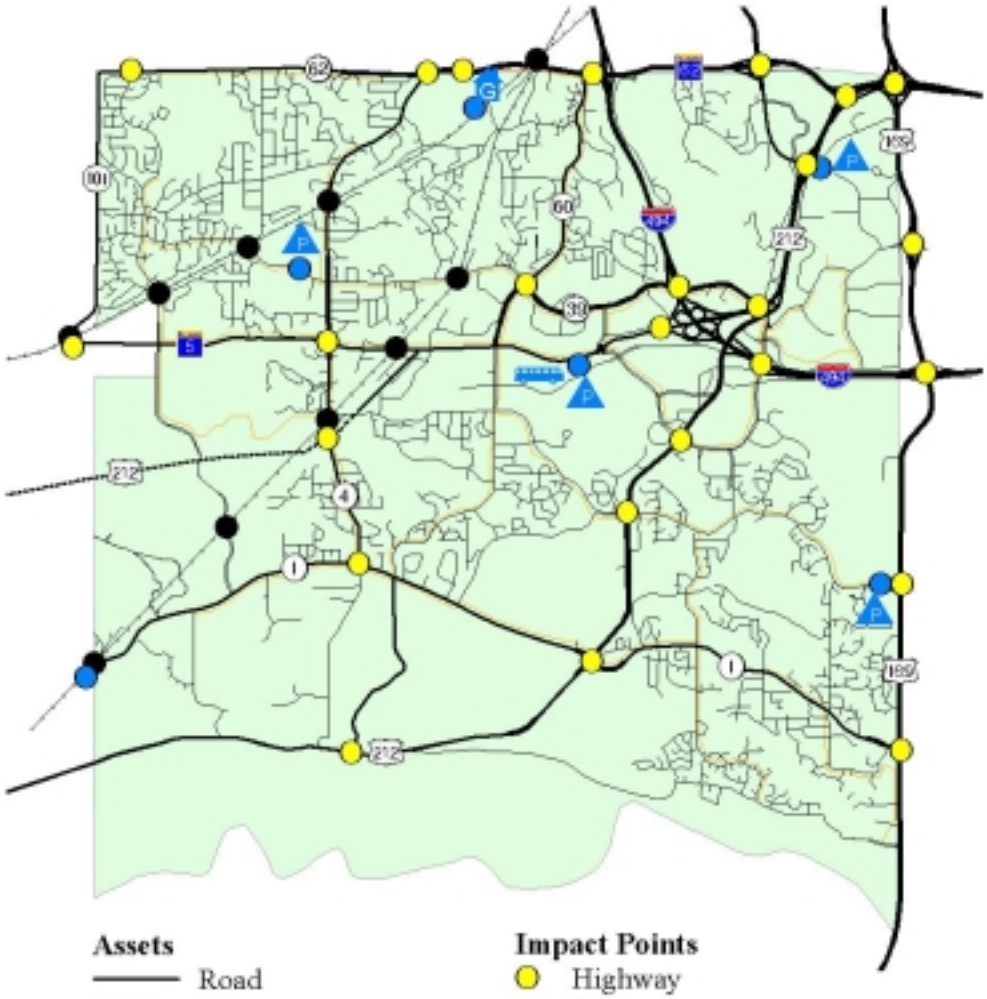

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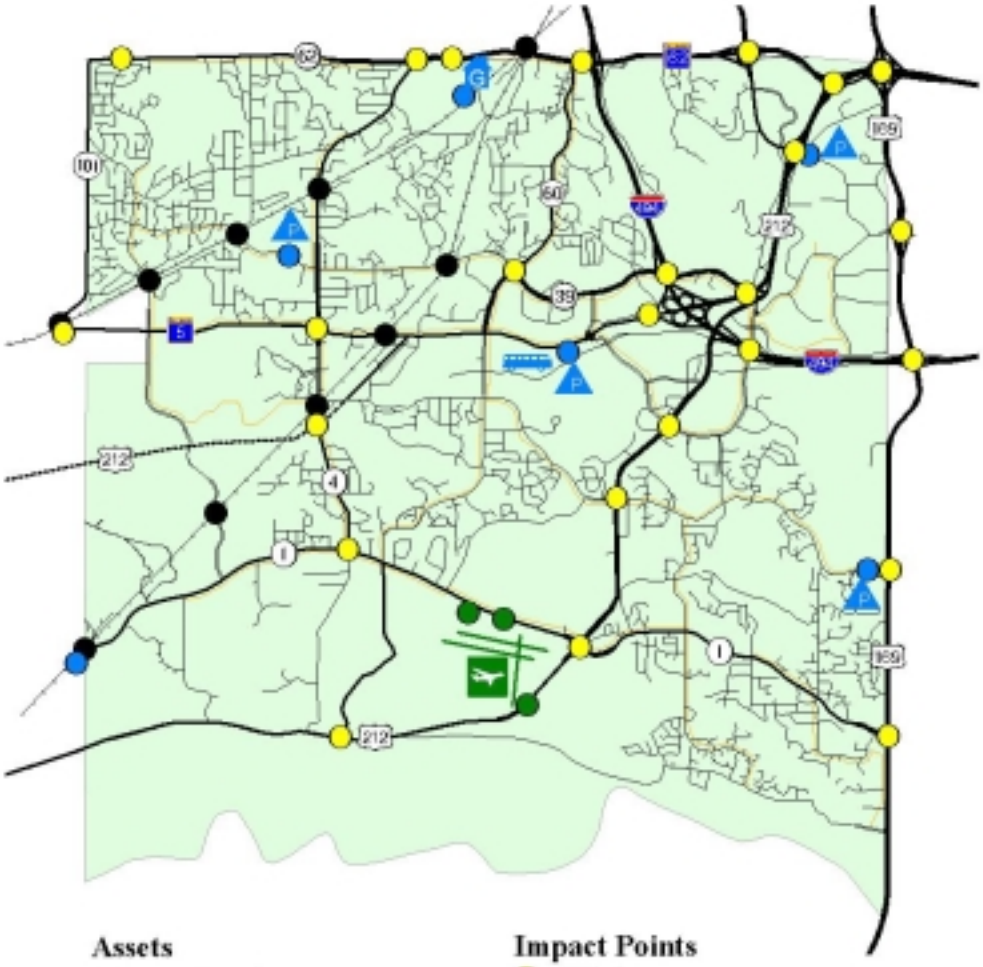

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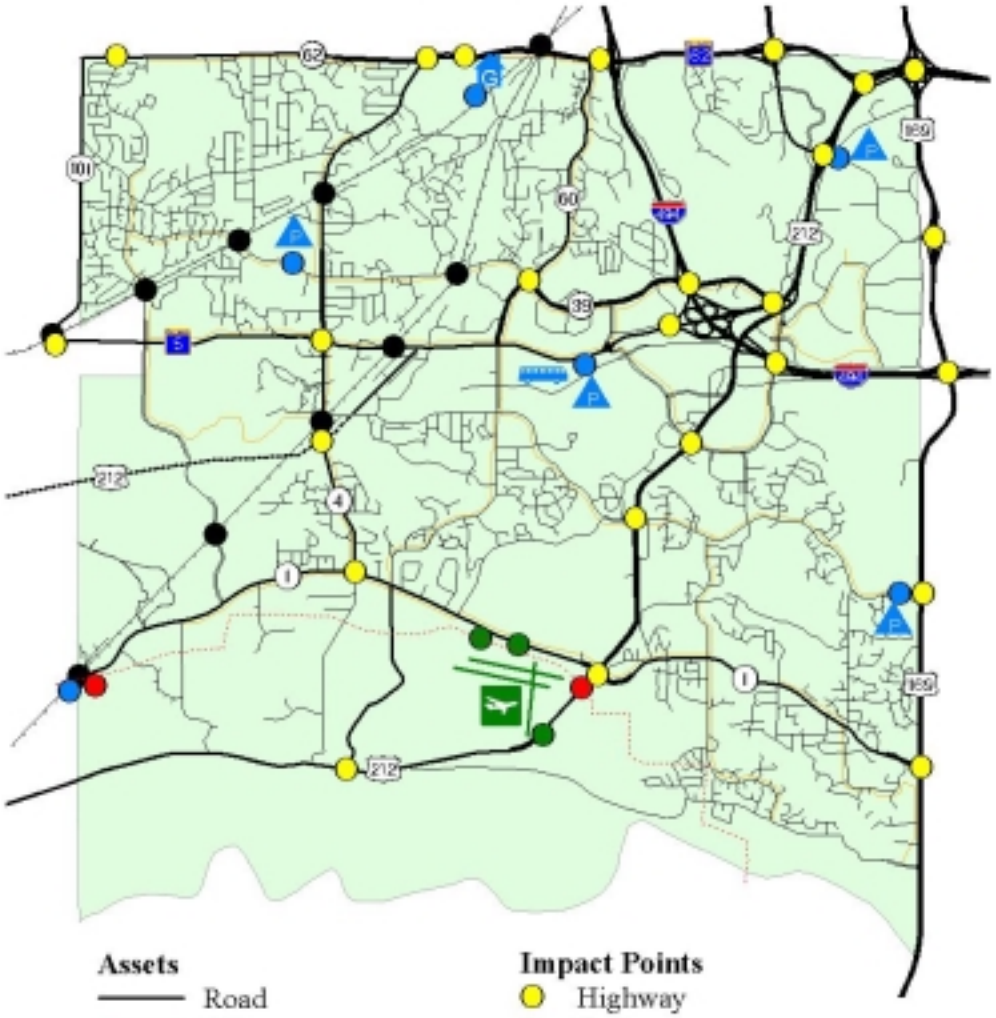

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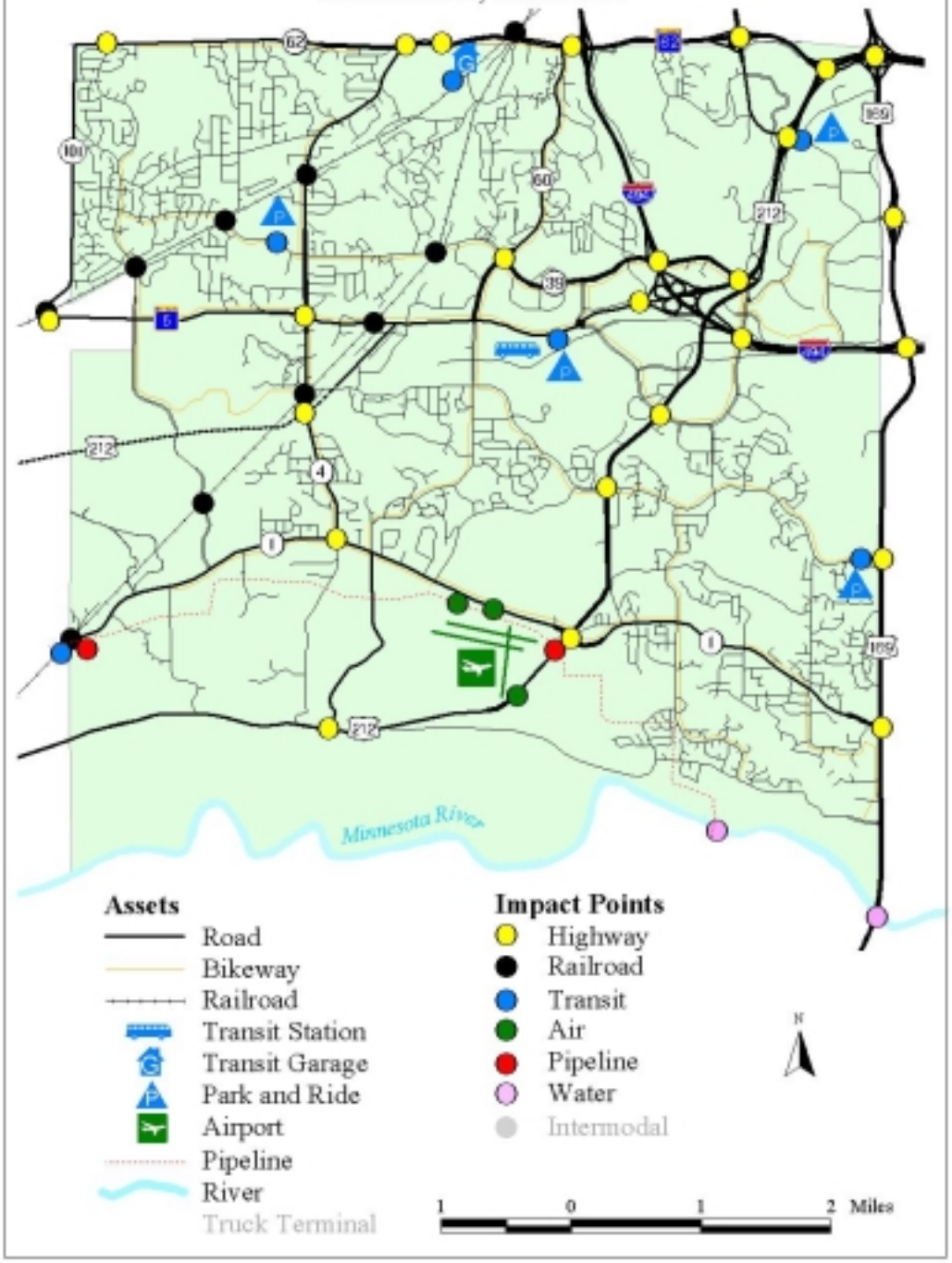

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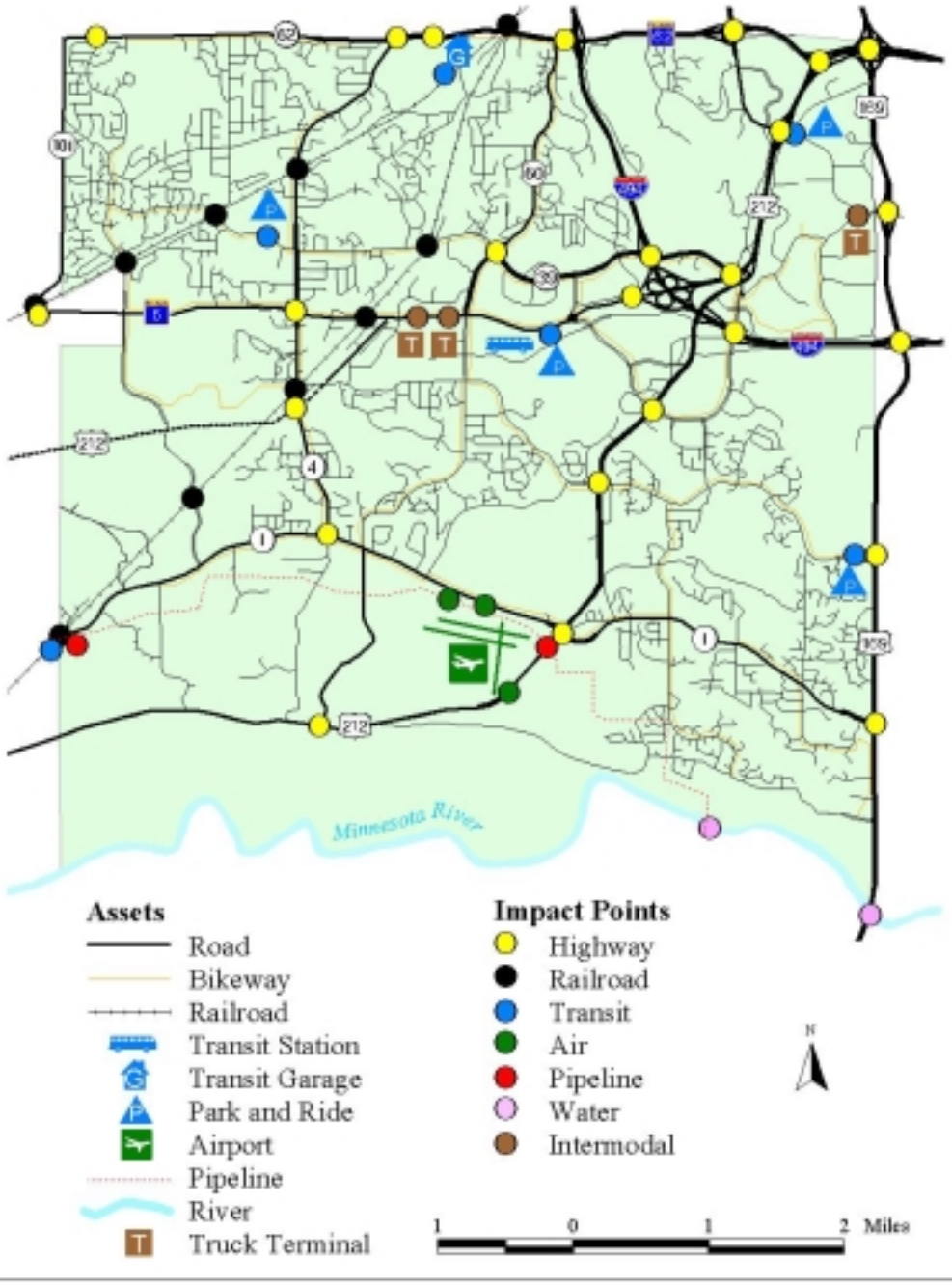
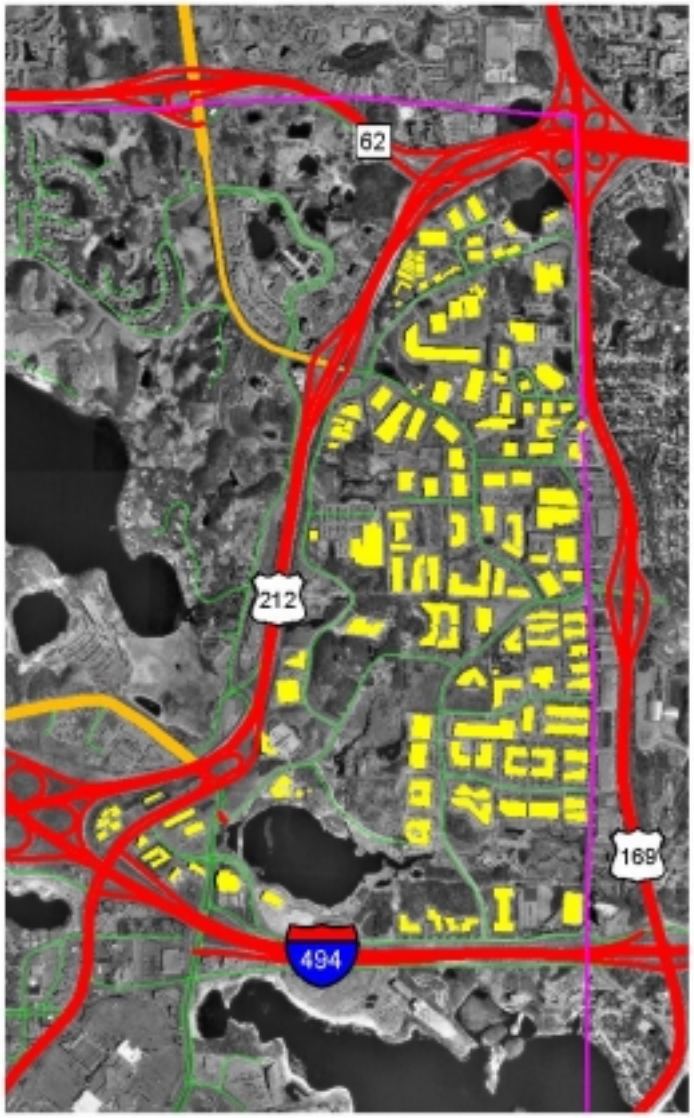


Eden Prairie's Golden Triangle



Interstate, U. S. & State highway

County highway

City street

Municipal boundary

Building

Statistics:

- 1.19 square miles (763 acres)
  - 713 developed acres
    - 1,800,000 sq. ft. office
    - 6,900,000 sq. ft. warehouse
    - 300,000 sq. ft. commercial
    - 9,000,000 sq. ft. TOTAL
- 90 units of housing
- 27,500 parking spaces
- 26,000 jobs
- Approximately 50 remaining undeveloped acres guided for:
  - 10+ acres industrial use
  - 36 acres office use
  - 3+ acres commercial use

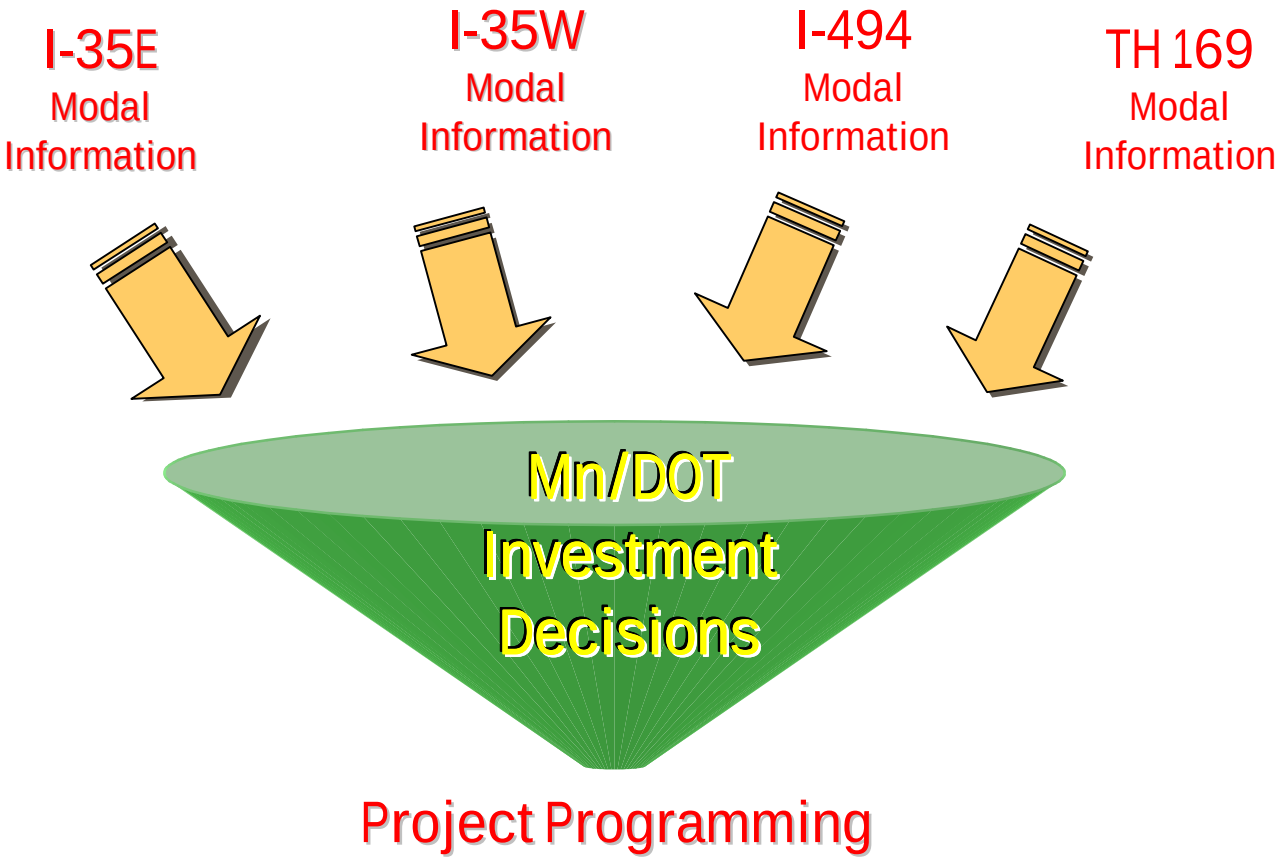
0 0.25 0.5 0.75 1 Mile

N W E S

Data sources: Photo: Metropolitan Council, 1997; Roads: MnDOT basemap, 1999; Statistics: City of Eden Prairie, 2000.

For **programming** purposes, this information discovery process enables staff to incorporate modal planning with reasonable assurance that the recommendation to invest in Project (X) has been thoughtfully reviewed, documented and supported with evidence that supports a financial commitment, by:

- Providing a modal ranking
- A composite picture of freight, passenger movement
- Quantifiable impacts
- Alliance opportunities (federal-state-county-city and possibly private industry funding)



Our staff believes that ***if there is a potential impact, there is a potential opportunity*** to work together to deal with it. If all of us make a conscious decision to own the problem, we can own the solution!

For example:

- Grants, unavailable to highways, but available for transit and rail
- Matching funds, soft and hard money, from local government, through long term CIP
- Private sector participation, through dedicated right-of-way or cash, TDM strategies

Our journey continued. In April I was invited by FHWA, Office of Freight Management and Operations, to address the staff on the modal planning concept and get their feedback on the direction we are taking. The following favorable comments about our model helped us launch the next steps of our journey to implementation:

- Customer-focused strategy (industry and government)

- Freight-passenger approach. Balanced. Recognizes unique attributes.
- Relationship between travelways
- Investment partnerships (federal, state, county, city and industry)
- Performance-based metrics
- Priority matrices for investment-decision support
- Feedback loop to evaluate actual outcomes for future planning and investments

The FHWA encouraged Mn/DOT Metro Division to conduct case studies demonstrating analytical tools, results and recommendations. We in the midst of the most challenging phase of the journey to implementation, namely the integration and formalization of modal planning products and services with other transportation and project development functions. Three significant activities are underway to begin the incorporation and sophistication of modal planning into our business cycle. One is the three-year plan entitled "Transportation System Plan" or TSP; the second is the Interregional Corridors, or IRC's; and the third is Bottleneck removal.

The first project, the TSP, is the investment plan for our division for the next three years. It will now include modal priorities more directly. Our staff added text to ensure that multi-modal transportation considerations were implemented at each step as follows:

Transportation System Plan 2000

CH 1: History and Change in Transportation Planning in the Metro Division

TSP2000 Multi-Modal Discussion Issues

- *Freight (customer, or user) impact on highway system is significant*
  - *-Businesses produce freight movement and employee (passenger) movements during peaks*
  - *-Freight movements are more frequent and numerous due to "just-in-time" inventory*
  - *-Freight from entire state, as well as surrounding states, is dependent upon Metro Area*
- *Congestion is a quantifiable economic detriment to freight*
- *Intermodal and multi-modal "hot spots" are identifiable locations for potential solutions to congestion*
- *Funding for other modes is available from sources other than "highway funding"*
- *Host communities have a vested interest in multi-modal planning partnerships with other local governments and industry*
- *Strategic investment opportunities exist in pre-planning with partners, study of funding alternatives, mixing of funds from different mode sources (non-highway), from private sources*
- *"Diversionary tactics" for heavily traveled corridors may include enhancement of other travelways*

CH 2: Planning Direction

TSP2000 Multi-Modal Discussion Issues

- *Today, 44 of the 46 business centers (centers of 5,000 jobs or more) are located in suburbs, not in the traditional central business district downtown areas*
  - *-Freight movements and employee (passenger) movements are spread out as a result*
  - *-Business expansion is continuing at the outer limits of the Metro Division boundaries*
  - *-Growth areas include: globalization of economy; service industries and functions; increased competitiveness in high-tech and knowledge-intensive manufacturing; changes in industrial location, development, and demographics; and reduced government role*
- *Multi-modal policy guidance is on the doorstep in may ways (State strategic plan, TEA-21, NEXTEA)*
- *Disconnect exists between businesses and government "planning-to-construction" time frame*
- *Engagement of businesses (those responsible for freight and employment) is extremely difficult*
- *Strategic Modal Planning Tool addresses measurement of strategic transportation issues of mobility, access management, safety/accidents, infrastructure, modal and intermodal travel, functional class)*
- *Freight and passenger "customers" have high stake investment of time and money in transportation system effectiveness, mobility, safety, reliability, and dependability*
- *Trends in multi-modal transportation management should be reviewed as possible solutions*

CH 3: Current System Performance and Deficiencies

TSP2000 Multi-Modal Discussion Issues

- *Get at customers (businesses/employees) with transit advantages—its worth while, they (businesses and employees) should know how to use it to their financial advantage*
- *Explain bottlenecks from freight point of view—economic impact, location decision impact*
- *Add pipelines and intermodal sites to performance responsibilities, assumptions, and challenges*
- *Incorporate freight performance issues into discussion, prioritization of investment*
- *Understand relationship/dependency of all freight routes upon the Metro Area*

CH 4: Needs Analysis

TSP2000 Multi-Modal Discussion Issues

- *Strategic Modal Planning Tool would be helpful in defining these concerns, quantifying intensity*
- *Include rail crossings, intermodal connections, pipeline*
- *ITS, prepared well, can serve many masters with single source data, i.e. truck & bus, bus & car*
- *Master plans for air, waterways, pipeline, rail, and intermodal should be reviewed in Metro area*
- *Economic impact on businesses (products and employees) also consideration; what should they be willing/required to contribute for accelerated support*

CH 5: Recommended Trunk Highway Funding Plan

TSP2000 Multi-Modal Discussion Issues

- *Develop inventory of multi-modal funding sources and types of projects eligible for receipt of funding—understand relationship of projects to leverage funding from all sources*
- *Develop rules/role for "host" communities in supplemental funding beyond Mn/DOT means*
- *Develop rules/role for private sector in supplemental funding beyond Mn/DOT means*
- *Review preservation, management, improvement, and expansion from point of view of freight*

CH 6: Corridor Investments and Studies

TSP2000 Multi-Modal Discussion Issues

- *Multi-modal "hot spot" identification along investment corridors*
- *Multi-modal traffic studies as strategies for identifying corridor improvement needs*
- *Bring other modal "players" to the table, i.e. Metro Transit, railroads, intermodal organizations, etc.*

CH 7: Unmet Needs

TSP2000 Multi-Modal Discussion Issues

- *Include freight trends and business-related transportation activities (including employee travel times) in discussion of trends*
- *Add future waterway, rail, intermodal, pipeline needs to discussion*
- *Include freight in user impact discussions*
- *"Principle" to drive unmet needs may be businesses, or freight, or customers*
- *Multi-modal benefits derived from additional funding*

CH 8: Work Program

TSP2000 Multi-Modal Discussion Issues

- *Freight and business needs as unresolved issues*
- *Goods movement key to freight and business needs*
- *Alternative financing/congestion management as part of expectation from local levels of government and, sometimes, the private sector, depending on benefiting party(ies)*
- *Include list of modal studies needed*

The second major project is known as the IRC's, or Interregional Corridors. These corridors are part of the backbone of transportation infrastructure for freight and passengers. These corridors connect communities, businesses, and people from "outstate" Minnesota to the metropolitan area. These communities have been recognized as economic centers, or regional

development centers, which are key to the economic sustainability of the State as a whole. The following points outline how modal analysis will be incorporated into these corridor plans:

Modal Analysis in IRC Plans

The IRC plans should recognize the importance of existing and potential modal facilities and services in and along interregional corridors. Modal facilities and services can divert some auto trips from the facility, and interregional corridors can improve the quality of passenger and surface freight transportation by:

- *Improving the performance and safety of the facility*
- *Addressing modal access issues identified through the IRC Plan preparation process*
- *Conveying modal issues and needs identified through the process back to the appropriate modal office and agency staff*

At a minimum, IRC modal analysis should follow the steps outlined below:

1. *Meet with modal office and agency staff at the beginning of the IRC Plan process to discuss the status of the existing system, anticipated growth, and current and future issues, problems and concerns. From these meeting obtain all adapted modal plans and studies (e.g., Inter-city Bus Study, Statewide Transit Plans, Commuter Rail Study, Intermodal Study, etc.)*

2. *Conduct an inventory of modal facilities and services in the corridor (e.g., area and inter-city bus service, commuter rail, park-and-ride facilities, freight railroads, airports, inter-modal transfer facilities, access facilities).*

3. *Incorporate modal plans into the interregional corridor being analyzed and estimate any potential benefits that may accrue to the corridor from the modal improvement. In particular, estimate what corridor performance improvement may result if the modal plan is implemented.*

4. *Based on the meetings with stakeholders, the inventory of existing and future modal plans and the performance impact analysis, prepare a detailed list of modal issues, problems and concerns, major facility and service requests or proposals and access needs.*

5. *Transmit the above information to the appropriate modal office or agency staff and discuss what response, if any, is warranted in the IRC Plan.*

The IRC's have been identified for the entire Metro Division and are illustrated on the previous graphic entitled *"**Population and Employment Trends**"*.

The third project, Bottleneck Removal, is complex and difficult, not only practically, but politically. A bottleneck is defined as a spot on the highway where traffic routinely backs up, not only creating traffic delays, but creating increased environmental and economic costs as well. When vehicles (passenger or freight) are stopped in traffic, the result is increased emission of pollutants, less efficient operation of the vehicle(s), and greater use of fuel than if the vehicles were traveling at designated highway speeds.

The economic costs are harder to see, but our highways affect business and commerce in many ways. When bottlenecks interfere with operation of the road, the resulting consequences include reduced mobility on the road, affecting a business' ability to recruit and retain employees and affecting a business' ability to ship commercial freight over highways. The freight issue is particularly significant when considering the freight environment of "just-in-time" shipping. As an example, the standard practice in the auto industry is to charge ***$5,000 per minute*** for each minute that a shipment is late—a substantial and direct economic impact for having to traverse through a highway bottleneck!

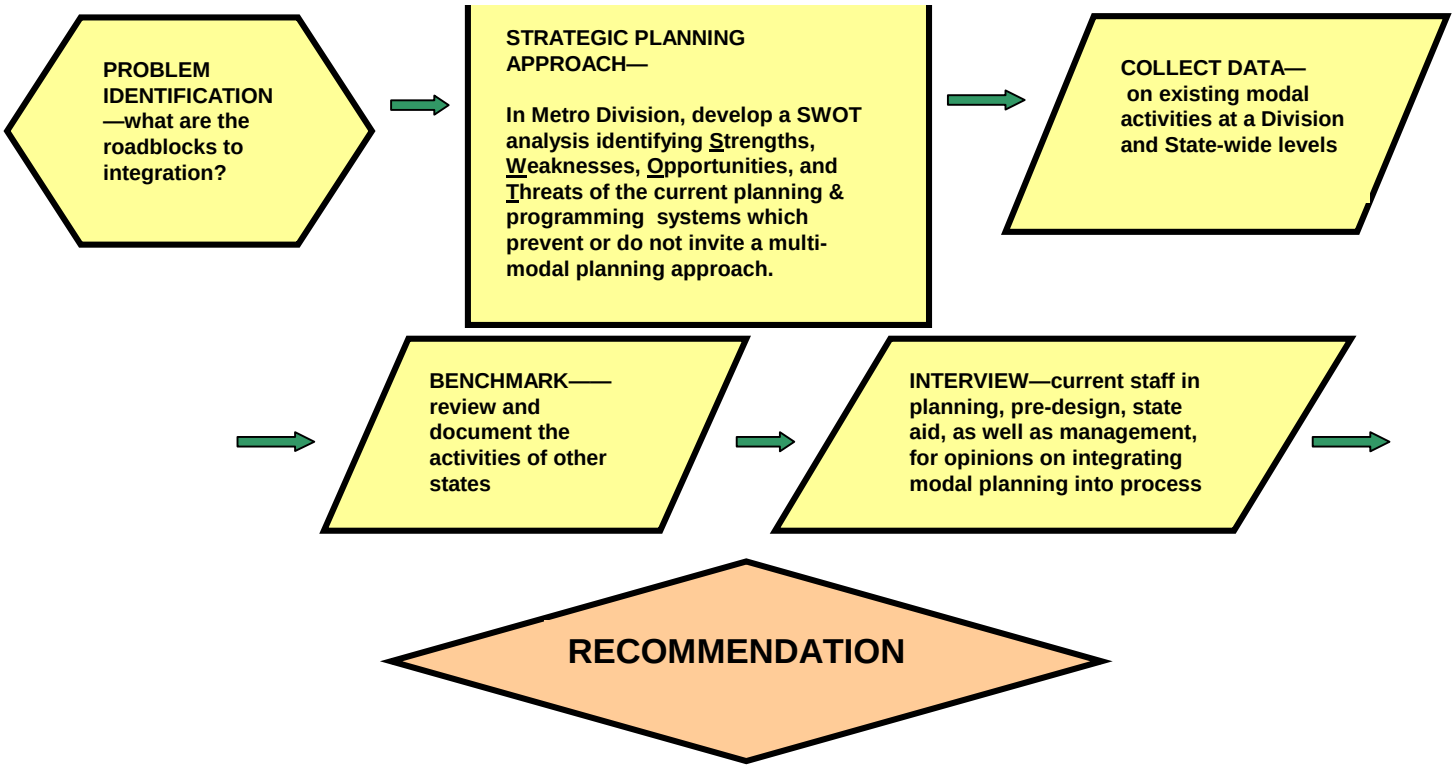
The Twin Cities area is a commercial and intermodal hub for the Upper Midwest. Highways form the backbone of the freight distribution system. This means that the health of our transportation system affects the economy of an entire region.

The bottlenecks have been identified for the entire Metro Division and are illustrated on the previous graphic entitled *"**Population and Employment Trends**"*.

Program Delivery - Project Development Process:

The question left to be answered, and frequently asked by managers and peers, is "So what—what difference does it make to program and project delivery?" In other words, how can we integrate the idea of multi-modal transportation planning ***into*** the current transportation planning process? With the support from above, our staff has set out to answer this question and formulate recommendations in a manner that will guarantee integration into the transportation planning and program delivery processes already in place. They have taken these steps to accomplish this:

Flow Chart of Activities



The following is a draft outline of the recommendations resulting from this process:

DRAFT RECOMMENDATIONS

How will we better integrate Modal Planning into the Transportation Planning activities of the Metro Division supporting the following premises?

- ***Multi-modal transportation planning is a Strategic Objective of Mn/DOT's Strategic Plan.***
- *Revised guidance for the next round of TEA-21 funding will be more focused on multi-modalism.*

♦ *Multi-modal planning adds intelligence and value to projects from the initial states of planning activities to the operation of the facility.*

Proposed Actions to Address Modal Planning Issues

Inventory Metro Modal Assets
- *Use lists established*
- *Assess impacts on other travelways*
- *Assess needs*
- *Address users (businesses, transportation industry, i.e. truckers, rail organizations)*
- *Research potential funding alternatives*

Develop Criteria for "Ranking" Modal Projects
- *Define "need"*
- *Define "support to highway system"*
- *Develop point system*

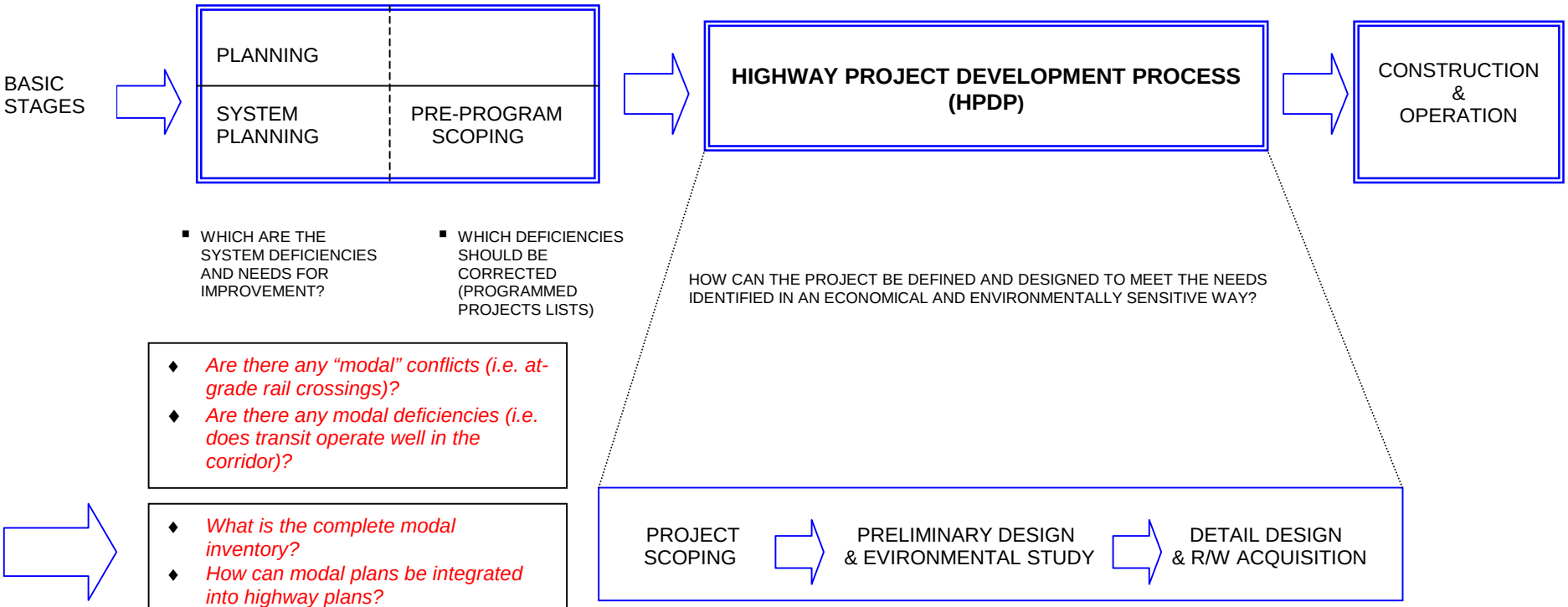
Formalize Partnerships with Metro Council
- *Develop Freight Planning Policy*
- *Develop Freight Planning Tools*
- *Coordinate on Multi-modal Planning Tools (add passenger)*
- *Complete coordinate of TSP and TPP*

Formalize Partnerships with Local Governments
- *Educate local governments on significance of modal planning*
- *Provide draft policies*
- *Provide draft planning tools for local adoption*
- *Develop financial planning tools for modal planning at local level*

Reorganize Metro Transportation Planning Activities
- *Blend modal planning into activities of planning within division*
- *Collect, develop, resources on modal planning for use by staff*
- *Define modal planning for today and future*
- *Provide for modal review of all transportation projects*
- *Determine studies needed to accomplish tasks*

Incorporate Recommendations into Project Development Process
- *Include modal planner on project teams*
- *Utilize modal planning to "stretch" funding, maximize funding opportunities for corridors/projects*
- *Include review of modal issues as part of safety, mobility, capacity, speed, access considerations for corridors/projects*

The graphic that follows depicts the **Highway Project Development Process** as it currently exists, with comments added by our staff for integration of multi-modal issues.


BASIC STAGES
PLANNING
SYSTEM PLANNING
PRE-PROGRAM SCOPING
HIGHWAY PROJECT DEVELOPMENT PROCESS (HPDP)
CONSTRUCTION & OPERATION
WHICH ARE THE SYSTEM DEFICIENCIES AND NEEDS FOR IMPROVEMENT?
WHICH DEFICIENCIES SHOULD BE CORRECTED (PROGRAMMED PROJECTS LISTS)
HOW CAN THE PROJECT BE DEFINED AND DESIGNED TO MEET THE NEEDS IDENTIFIED IN AN ECONOMICAL AND ENVIRONMENTALLY SENSITIVE WAY?
Are there any "modal" conflicts (i.e. at-grade rail crossings)?
Are there any modal deficiencies (i.e. does transit operate well in the corridor)?
What is the complete modal inventory?
How can modal plans be integrated into highway plans?
PROJECT SCOPING
PRELIMINARY DESIGN & EVIRONMENTAL STUDY
DETAIL DESIGN & R/W ACQUISITION
How are passengers affected?
How is freight movement affected?
What are the impacts of other travelways on the highway project?
What "modal opportunities" exist to support and/or improve the operation of road?
Who are the modal partners who may contribute to the project success? (Transit, rail, etc.)
WHAT COMPONENTS SHOULD THE PROJECT CONSIST OF?
WHAT IMPACTS & ALTERNATIVES SHOULD BE ANALYZED?
WHAT PERMITS AND APPROVALS ARE NEEDED?
WHAT PUBLIC AND AGENCY COORDINATION
WHAT ARE THE IMPACTS OF THE REASONABLE LOCATION AND/OR DESIGN ALTERNATIVES?
WHICH ALTERNATE SHOULD BE CHOSEN?
WHAT CAN BE DONE TO MITIGATE ADVERSE IMPACTS?
WHAT ARE REASONABLE ENGINEERING PARAMETERS?
HOW CAN COMMUNITY VALUES BE PRESERVED?
HOW CAN THE CHOSEN ALTERNATE BEST BE DESIGNED TO MITIGATE IMPACTS AT A PRACTICAL PRACTICAL COST?
WHAT ARE THE DETAILED AFFECTS?
WHAT ARE THE LAND ACQUISITION REQUIRE-MENTS (IF ANY)?
DOES THE PROJECT ADD LASTING VALUE TO THE THE COMMUNITY?
Where are the modal "hot spots"?
Who are the affected partners?
What are the issues and potential resolution?
What is the cooperative funding potential?

Our Journey to Implementation:

In the next few months it is our goal to have the process "blessed" by the management team, understood by colleagues, industry, government partners and elected officials. The test of the process will be:

- **Can modal planning "intelligence" contribute to the department's four strategic objectives:**
  - **Multi-modalism**: Creation of an inter-related transportation system
  - **Program delivery**: Address critical infrastructure needs on time, on budget. Streamline the process while at the same time, "drill down to the critical modal issues" at a project level to incorporate forecasted growth factors, employment-to-population dynamics, market trends and the synergy between modes.
  - **Inter-regional corridors**: Linking regional economic centers with a multi-modal transportation system. Key to this objective is a clear understanding of the impacts of logistics on the economy and the role they play in the supply chain.
  - **Information**: Treat information as a product to be used by a variety of customers both internal, external, public and private. We need to clearly articulate the role of transportation in the economy.
- **Will the Modal Planning process help us realize our goal? "To identify and resolve impediments to freight and passenger movement to and through the Twin Cities Metropolitan Area (eight county region)."** The benchmarks may be:
  - Validation of system performance (before, during and after project implementation)
  - Validation of other travelway system performance (have the "hot spots" been adequately addressed, is performance improved?)
  - Dialogue with city and county partners (before, during and after project implementation)
  - Evidence of learning about modal planning with government partners (CIP, state plans, corridor studies)
  - Validation and evaluation of the technical process to provide objective, quantifiable, replicable means for achieving modal planning and project development
  - Quantify benefits to Mn/DOT and partners realize versus resources required to implement (return-on-investment)
  - Customer feedback (has the time invested in the process been worthwhile? Are the modal products and services making a difference in their operations?)

As we move forward, our goal is to learn and share along the way. The insight we gain in what works and what doesn't in getting our "arms" around modal planning will help us address the challenges we face as state departments of transportation in providing for an efficient, safe and productive system.